RouteFinder®

SOHO Security Appliance

RF820 & RF820-AP
RF830 & RF830-AP

Quick Start Guide

MultiTech® Systems

Quick Start Guide
RouteFinder SOHO Security Appliance
RF820 & RF820-AP
RF830 & RF830-AP
Document Product Number 82100048L, Revision D

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Revision	Date	Description
A	04/20/06	Initial release. Software version 1.00
B	01/09/07	Software version 1.30
C	04/05/07	Updated Technical Support contact list
D	10/23/07	Software version 1.40. *Save and Restart* functionality changed.

Patents

This device is covered by one or more of the following U.S. Patent Numbers: 6,219,708; 5,301,274; 5,309,562; 5,355,365; 5,355,653; 5,452,289; 5,453.986.

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Chapter 1 – Introduction and Description

Welcome to the world of Internet security. Your Multi-Tech RouteFinder SOHO security appliances, models RF820 and RF830, and RouteFinder SOHO wireless security appliances, models RF820-AP and RF830-AP, are ideal for the small office or home office (SOHO) that need secure access to a corporate LAN.

In addition to providing a WAN Ethernet port(s) for DSL or cable broadband Internet access, these devices also offer both client-to-LAN and LAN-to-LAN VPN connectivity based on the IPSec or PPTP protocols. The RouteFinder supports up to 15 VPN tunnels and provides 168-bit 3DES and AES encryption to ensure that your information remains private. In addition, it offers secure Internet firewall services.

RouteFinder Ship Kit Contents

The RouteFinder shipping box contains the following items:

- One SOHO RouteFinder
- Power Supply
- 2.4 GHz 5dBi SWI-Reverse-F Swivel Access Point Antenna (Included with the wireless models only)
- Ethernet cable (included with the RF830 model)
- This Quick Start Guide
- IPSec VPN Client 30-day evaluation software on CD (not the full working version).
- One RouteFinder CD which contains RouteFinder documentation and Adobe Acrobat Reader.

If any of the items is missing or damaged, please contact Multi-Tech Systems, Inc.

RouteFinder Documentation

The Quick Start Guide

The Quick Start Guide is a shorter version of this User Guide. It is included in printed form with your RouteFinder. The guide provides the necessary information for a qualified person to unpack, connect, and configure the device for proper operation.

The User Guide

The User Guide can be downloaded from the RouteFinder CD by clicking Install Manuals on the Installation screen or downloading the file from the Multi-Tech Web site at: http://www.multitech.com.

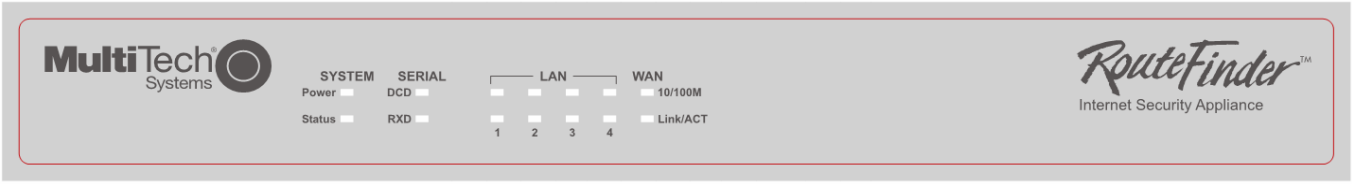
Adobe Acrobat Reader

Adobe Acrobat Reader is a free program for viewing PDF formatted documents. It can be installed from the CD (click on Install Manuals and select Install Adobe Acrobat Reader).

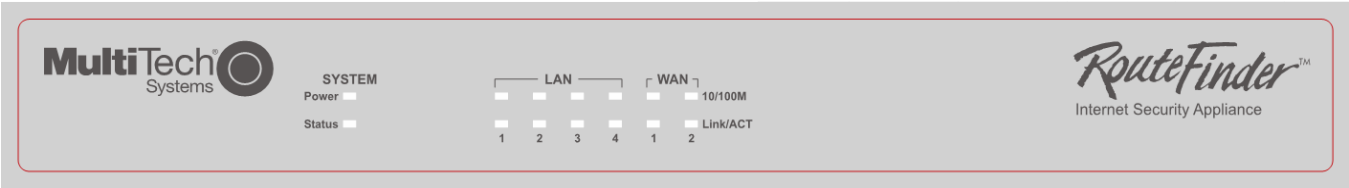
Telecom Warnings for the Modem

1. Never install telephone wiring during a lightning storm.
2. This product must be disconnected from the telephone network interface when servicing.
3. This product is to be used with UL and cUL listed computers.
4. Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
5. Use caution when installing or modifying telephone lines.
6. Avoid using a telephone during an electrical storm. There may be a remote risk of electrical shock from lightening.
7. Do not use the telephone to report a gas leak in the vicinity of the leak.
8. To reduce the risk of fire, use only No. 26 AWG or larger telecommunications line cord.
9. Never install telephone jacks in a wet location unless the jack is specifically designed for wet locations.

RF820/RF820-AP Front Panel

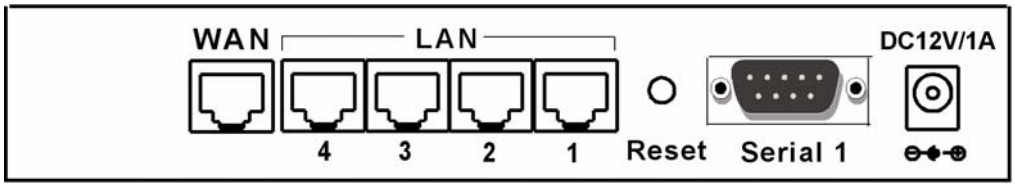


RF830/RF830-AP Front Panel

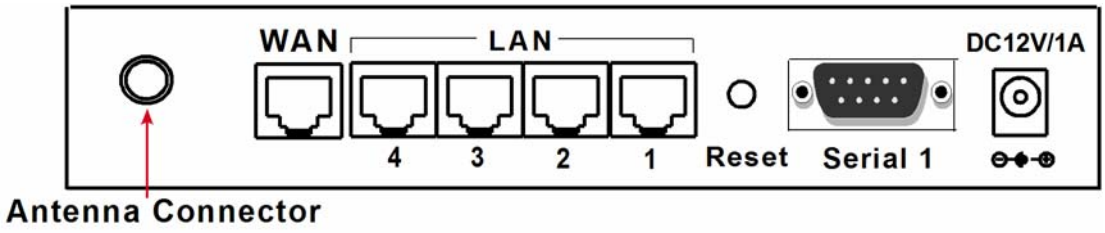


LEDs	Description
Power	Lights when power is being supplied to the RouteFinder.
Status	When functioning normally, the LED blinks. The LED is a solid light when the RouteFinder is booting up, saving the configuration, restarting, or updating the firmware.
Serial DCD	(RF820s only) Lights when Serial port is connected to a remote site.
Serial RXD	(RF820s only) Blinks when Serial port is receiving or transmitting data.
LAN10 /100M	Lights when a successful connection to the 100BaseT LAN is established. Off when connected to the 10BaseT.
LAN Link / ACT	Lights when the LAN port has a valid Ethernet connection. Blinks when it is receiving or transmitting data.
WAN 10 /100M	Lights when a successful connection to the 100BaseT WAN is established. Off when connected to the 10BaseT.
WAN Link / ACT	Lights when the WAN port has a valid Internet connection. Blinks when it is receiving or transmitting data.

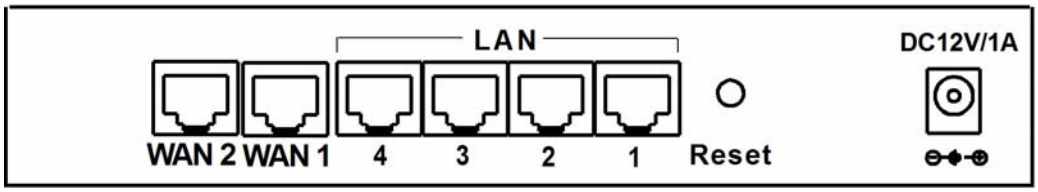
RF820 Back Panel



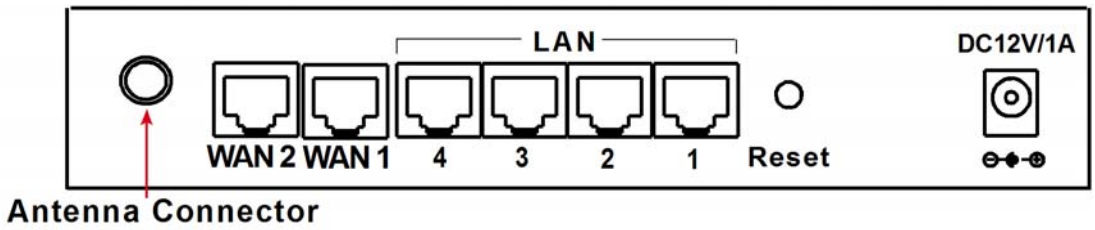
RF820-AP Back Panel



RF830 Back Panel

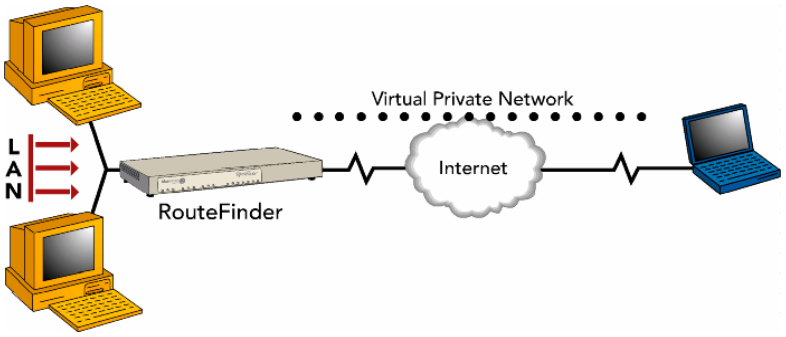
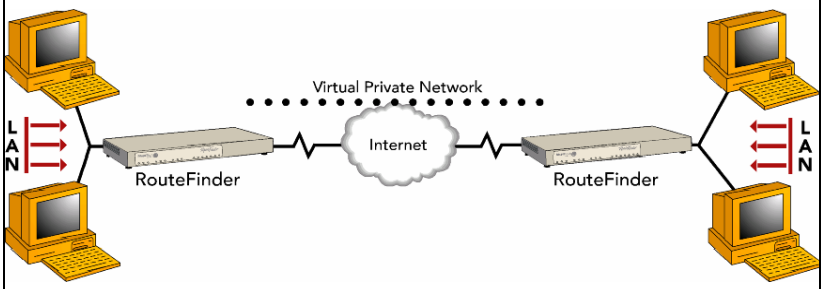
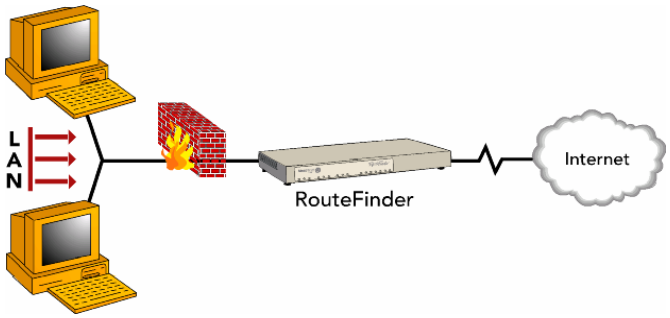
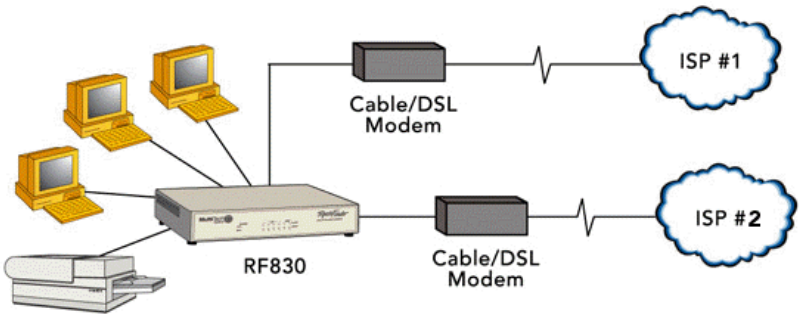


RF830-AP Back Panel



Connector	Description
Antenna Connector	Connector for the 2.4 GHz 5dBi SWI-Reverse-F antenna. The antenna must be connected before the RouteFinder is operational.
WAN	WAN (10/100BaseT) port connects the DSL modem or cable modem. The RF820s have one WAN port; the RF830s have two WAN ports.
LAN Ports	There are 4 LAN ports. You can connect to PCs, FTP servers, printers, or other devices you want to put on your network.
Reset	The Reset button resets the RouteFinder to its factory defaults. Press and hold the button until the Status LED goes off (at least 8 to 10 seconds), and then release it. Do not press this button unless you want to restore all settings to the factory defaults.
Serial	(RF820s only) Serial port connects to a standard modem (optional).
12VDC Power	The power port connects the AC power adapter.

Typical Applications

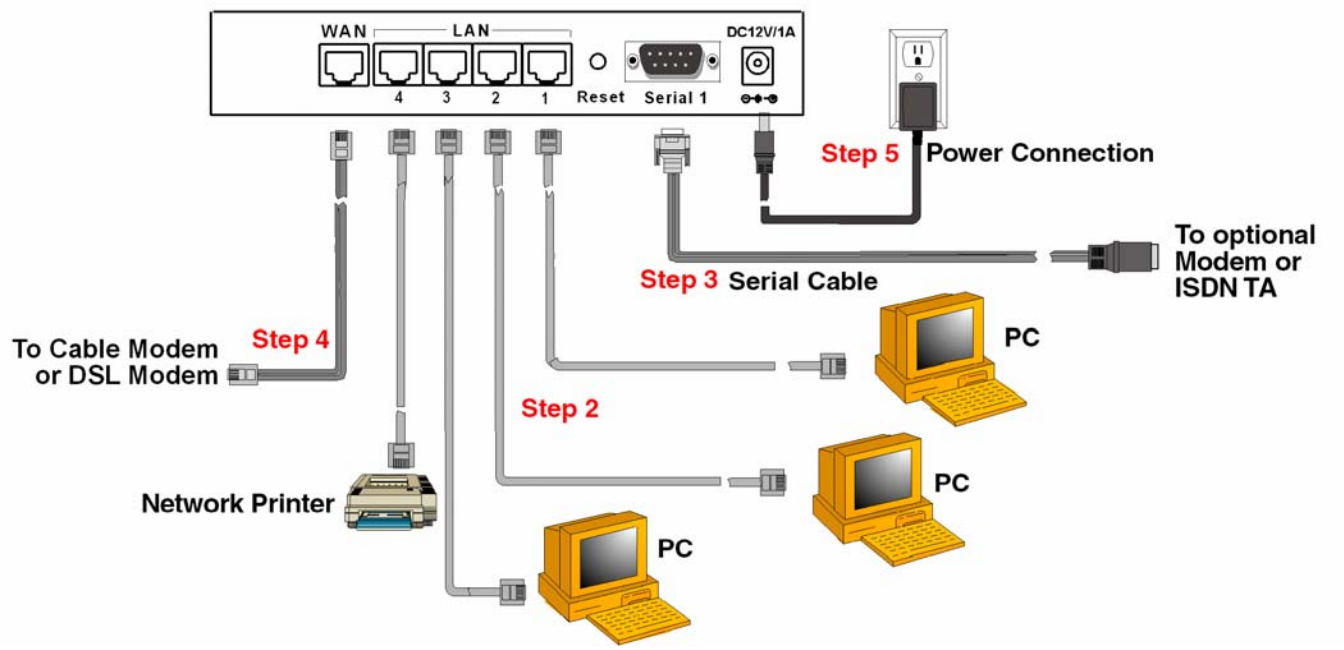
Remote User. The client-to-LAN application replaces traditional dial-in remote access by allowing a remote user to connect to the corporate LAN through a secure tunnel over the Internet. The advantage is that a remote user can make a local call to an Internet Service Provider, without sacrificing the company's security, as opposed to a long distance call to the corporate remote access server.	
Branch Office. The LAN-to-LAN application sends network traffic over the branch office Internet connection instead of relying on dedicated leased line connections. This can save thousands of dollars in line costs and reduce overall hardware and management expenses.	
Firewall Security. As businesses shift from dial-up or leased line connections to always-on broadband Internet connections, the network becomes more vulnerable to Internet hackers. The RouteFinder provides a full-featured firewall based on Stateful Packet Inspection technology and NAT protocol to provide security from intruders attempting to access the office LAN.	
Load-Balancing. Load Balancing distributes LAN-to-LAN traffic over two WAN links. This allows for the amount of traffic on each line to be based on a specified weighed value so that communication can be made faster and more reliable. **Failover.** If one port were to go down, the RouteFinder appliance would automatically re-route all Internet and VPN traffic to the other connection. The second WAN port greatly enhances performance and system uptime.	

Chapter 2 – Installation

Cabling Your RF820 RouteFinder

Your RouteFinder requires making the appropriate connections to PCs, a cable or xDSL modem, an analog modem or ISDN TA (RF820 only), and AC power.

After your device is properly cabled, it must be configured. See Chapter 3 for basic directions. For advanced configurations, see the User Guide.



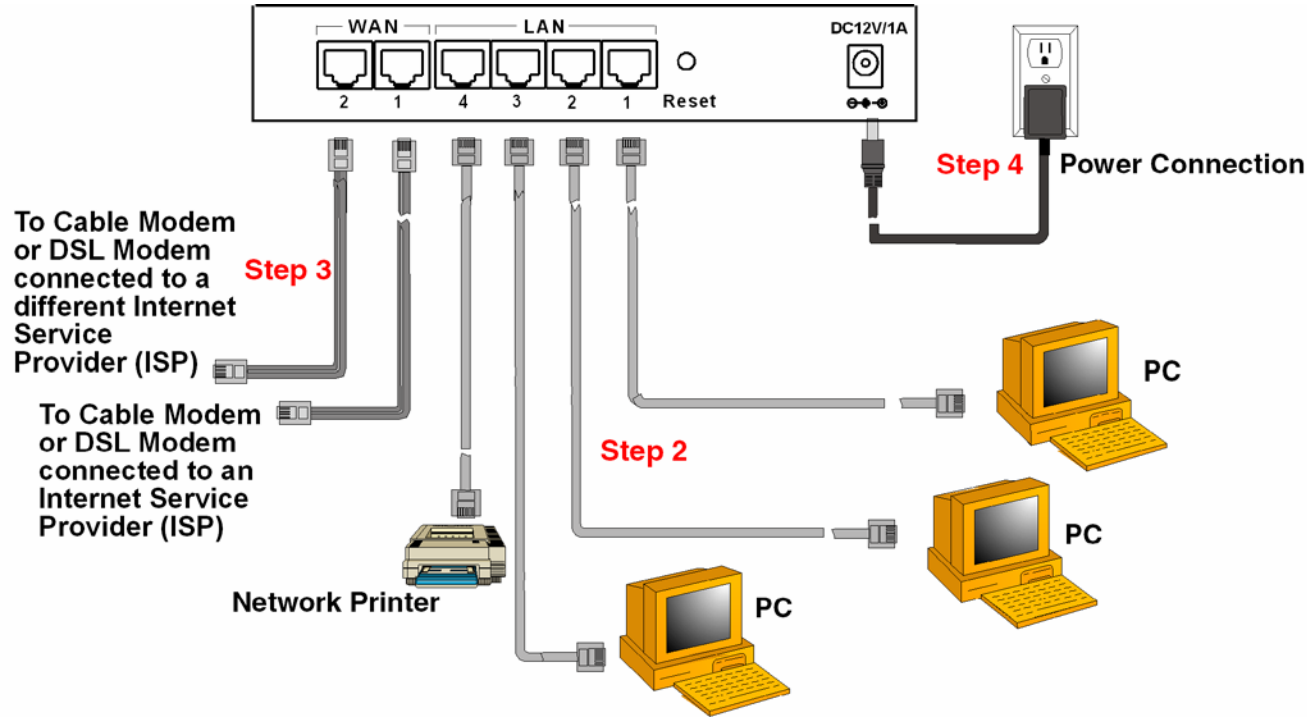
1. Turn the power off on all network devices (PCs, cable modems, DSL modems, analog modems, ISDN TAs, and the router).
2. Plug one end of a RJ-45 cable into the Ethernet port on the PC and other into one of the LAN port on the RouteFinder. (If you have more than one PC, connect the others in the same way to the other LAN ports).
3. If using an analog modem, connect it to the RF820's serial port.
4. Connect a network cable from the DSL or cable modem to the RouteFinder WAN port.
5. Connect the provided power supply cable to the 12VDC power port on the back of the RouteFinder, and plug the other end of the power supply into an AC power outlet.

Cabling the RF820-AP

Use the cabling procedures above and attach the wireless antenna. See the Back Panel section earlier in this chapter for the location of the antenna connector.

Note: The antenna must be attached in order for the RouteFinder to be operational.

Cabling Your RF830 RouteFinder



1. Turn the power off on all network devices (PCs, cable modems, DSL modems, analog modems, ISDN TAs, and the router).
2. Plug one end of a RJ-45 cable into the Ethernet port on the PC and other into one of the LAN port on the RouteFinder. (If you have more than one PC, connect the others in the same way to the other LAN ports).
3. Connect a network cable from the DSL or cable modem to the WAN port on the RouteFinder. A second WAN port is provided for connecting a second DSL modem or cable modem that uses a different Internet Service Provider (ISP). This gives you the option to switch from one ISP to another in case one provider is not available.
4. Connect the provided power supply cable to the 12VDC power port on the back of the RouteFinder, and plug the other end of the power supply into an AC power outlet.

Cabling the RF830-AP

Use the cabling procedures above and attach the wireless antenna. See the Back Panel section earlier in this chapter for the location of the antenna connector.

Note: The antenna must be attached in order for the RouteFinder to be operational.

The RF820-AP and RF830-AP Antenna

Your ship kit for the wireless RouteFinders (RF820-AP and RF830-AP) includes a 2.4 GHz 5dBi SWI-Reverse-F Swivel Antenna.

Important Notes:

- The antenna for this product must be a reverse polarity SMA antenna.
- The antenna must be attached in order for the RouteFinder to be operational.

Antenna Electrical Characteristics

Frequency:	2400 to 2500 MHZ
Gain:	4.5dBi (nominal)
VSWR:	≤ 2
Polarization:	Linear, Vertical
Maximum Power:	20W
Impedance:	50 Ω
Connector:	RP-SMA Plug
	Reverse Polarity Meets FCC Part 15.203 Requirements

See the User Guide for the antenna's environmental and mechanical specifications.

Setting up a Workstation and Starting the RouteFinder

This section of the Quick Start Guide covers the steps for setting up TCP/IP communication on the PC(s) connected to the RouteFinder, starting up the RouteFinder, and opening the RouteFinder Web Management program.

Establish TCP/IP Communication

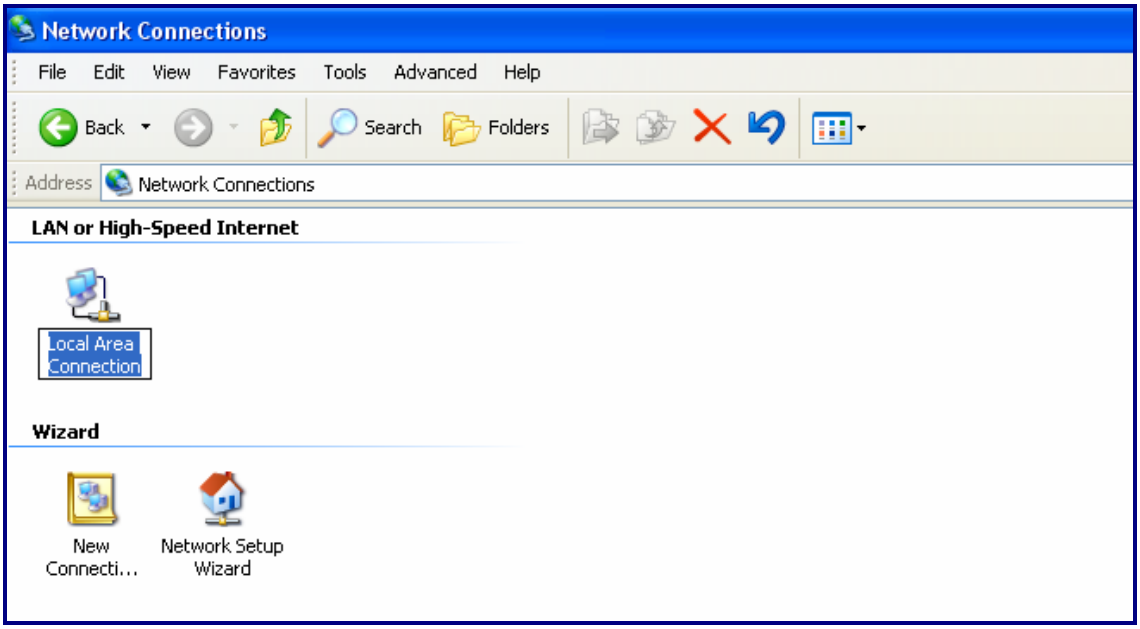
Notes:

- The RouteFinders have built-in DHCP server functionality, so you can set the PC to obtain a dynamic IP address.
- The following directions are for Windows 2000+ / XP operating systems.

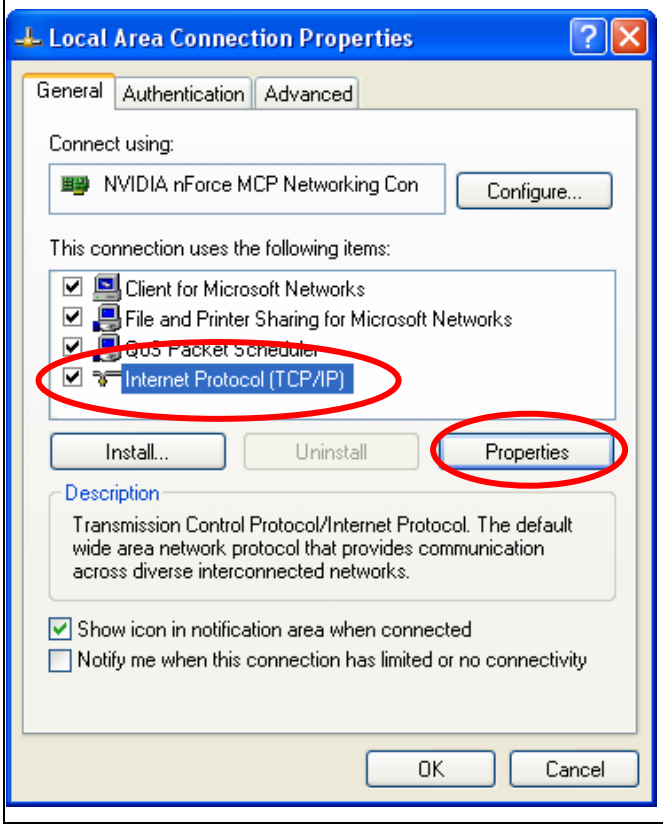
Obtain a Dynamic IP Address

To obtain a dynamic IP address so it can be assigned to the Ethernet port:

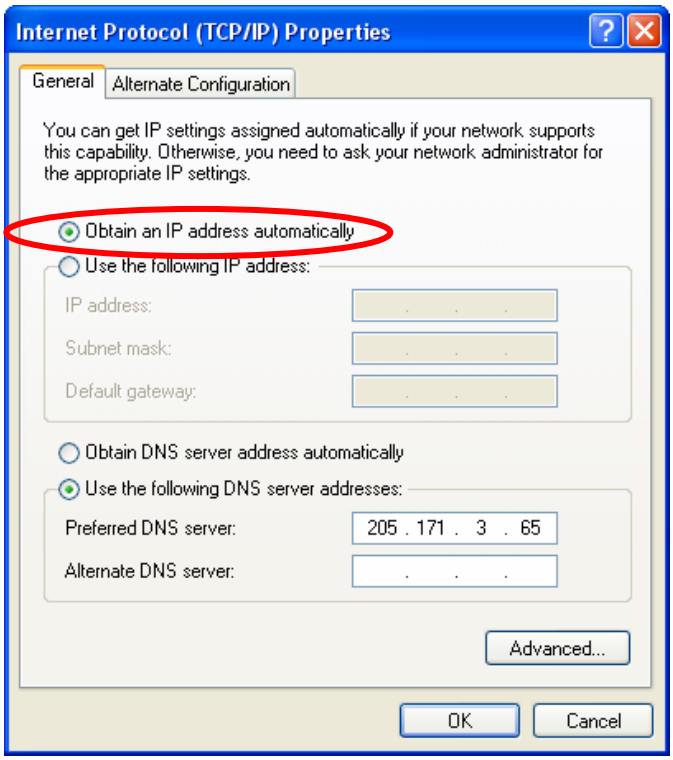
1. Make the RouteFinder connections as described on the previous two pages.
2. Click **Start | Settings | Control Panel**. Double-click the **Network Connections** icon.
3. The **Network Connections** screen displays. Right-click the **Local Area Connection** icon and choose **Properties** from the drop down list.



4. The **Local Area Connection Properties** dialog box displays.
   - Select **Internet Protocol [TCP/IP]**.
   - Click the **Properties** button.



5. Once you click the Properties button, the following screen displays. To have your DCHP client obtain a dynamic IP address, click the button for **Obtain an IP address automatically.**


Internet Protocol (TCP/IP) Properties
General
Alternate Configuration
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
Subnet mask:
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server: 205 . 171 . 3 . 65
Alternate DNS server:
Advanced...
OK
Cancel

6. Close out of the Control Panel.
7. Repeat these steps for each PC on your network.

To Set a Fixed IP Address

To set a Fixed IP Address, check **Specify an IP address** instead of **Obtain an IP address automatically**. Then click **OK**.

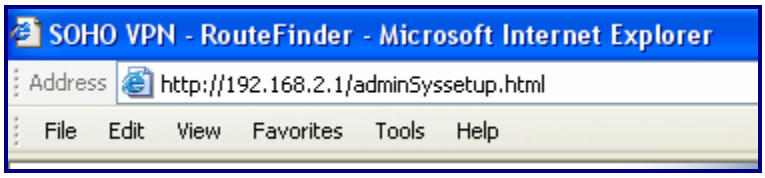
1. Enter the workstation IP address as **192.168.2.x**. Note that the **x** in the address stands for numbers 101 and up.
2. Enter the Subnet mask as 255.255.255.0
3. Enter the Default gateway as 192.168.2.1
4. Close out of the Control Panel.
5. Repeat these steps for each PC on your network.

Open a Web Browser

Note: Be sure that the RouteFinder is cabled and that the power is connected. See the cabling drawings at the beginning of this chapter.

Bring up a Web browser on the PC.

- Type the default gateway address line:
  http://192.168.2.1
- Press Enter.



Note: Make sure your PC's address is on the same network as the router's address. **IPCONFIG** is a tool for finding out a PC's IP configuration (the default gateway and the MAC address).

Login

The Login screen for the RouteFinder software displays.

- Type **admin** (*admin* is the default user name) in the user name box.
- Type **admin** in the password box.
- Click **Login**.

Note: The **User name** and **Password** entries are case-sensitive (both must be typed in lower-case). The password can be up to 12 characters. Later, you will want to change the password from the default (**admin**) to something else (see the User Guide). If Windows displays the **AutoComplete** screen, you may want to click **No** to tell Windows OS to **not** remember the password for security reasons.

Password Caution: Use a safe password! Your first name spelled backwards is not a sufficiently safe password; a password such as xfT35$4 is better. It is recommended that you change the default password. Create your own password.

Web Management Software Opens

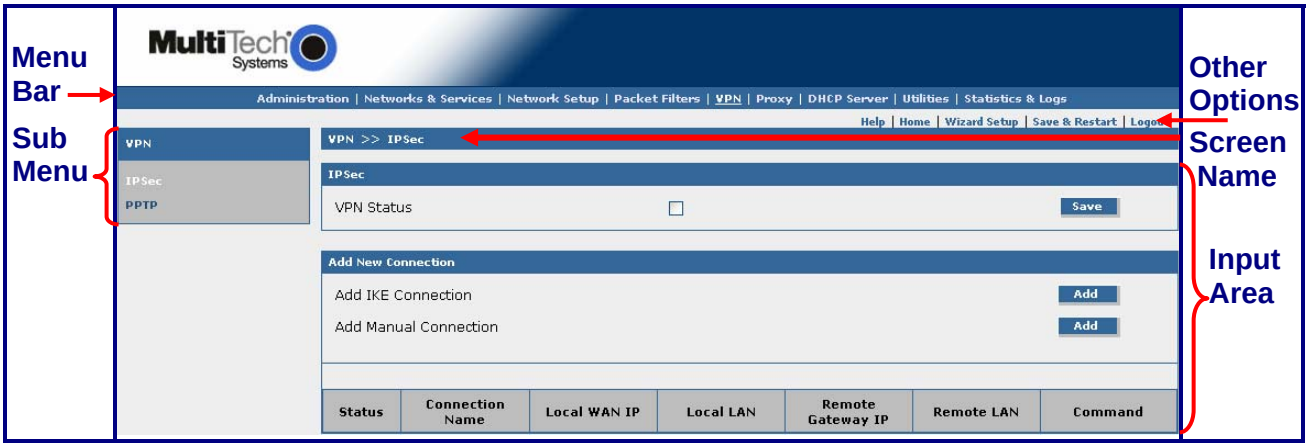
This is the Home screen from which you can access all setup functions.

Note: Only the top portion of the Home screen is shown here**.**

Administration | Networks & Services | Network Setup | Packet Filters | VPN | Proxy | DHCP Server | Utilities | Statistics & Logs
Help | Home | Wizard Setup | Save & Restart | Logout
>> Home Page
Home Page
RouteFinder Internet Security Appliance

Navigating Through the Software Screen

Before using the software, you may find the following information about navigating through the screens and the structuring of the menus helpful.



Menu Bar

See menu categories and their submenus listed on the next page.

Sub-Menus

Each Menu Bar selection has its own sub-menu, which displays on the left side of the screen.

When you click one of the Main Menu choices, the first screen listed in the sub-menu displays. You can choose other sub-menu options/screens by clicking on your sub-menu choice.

This is an example of the **Administration** sub-menu. It displays when you click **Administration**.

Table of Menus and Sub-Menus

Administration	Networks & Services	Network Setup	Packet Filters	VPN
System Setup Administrative Access System Logs Remote Syslog SNTP Client Tools Factory Defaults	Network Configuration Service Configuration	IP Settings Wireless LAN WLAN Security WLAN Client Filter Advanced IP Settings Load Balancing (RF830/RF830-AP only) PPP Cellular/Analog Backup (RF820/RF820-AP only) Dynamic DNS Static Routes IP Masquerading SNAT DNAT	Packet Filter Rules Advanced Filters ICMP Packet Filter Log	IPSec PPTP
Proxy	**DHCP Server**	**Utilities**	**Statistics & Logs**	
HTTP Proxy Custom Filters DNS Proxy	LAN LAN Subnet Settings LAN Fixed Addresses *These menu options:* Wireless LAN: WLAN Subnet Settings WLAN Fixed Addresses *display when you go to* ***Network Setup > Wireless LAN*** *and select* ***Independent Subnet****.*	Backup Firmware Upgrade	System Information Network Interface Details Packet Filter Log IPSec Live Log PPTP Live Log DHCP Server Live Log PPP Cellular/Analog Log (RF820/RF820-AP only) WLAN Client Live Log Log Traces	

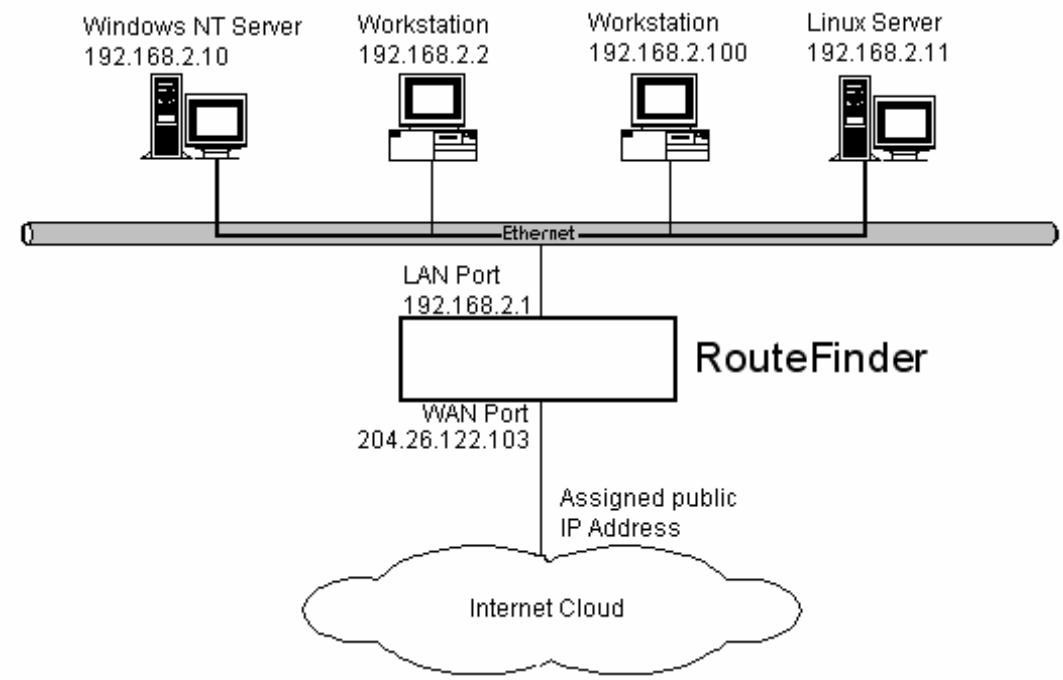
Chapter 3 – Configuration

Using the Setup Wizard to Configure the RouteFinder

Using the Wizard Setup is a quick way to enter the basic configuration parameters to allow communication between the LAN workstation(s) and the Internet as shown in the example below.

Important Note: An initial configuration must be completed for each type of RouteFinder functions: firewall configuration, LAN-to-LAN configuration, a LAN-to-Remote Client configuration.

RouteFinder Initial Configuration



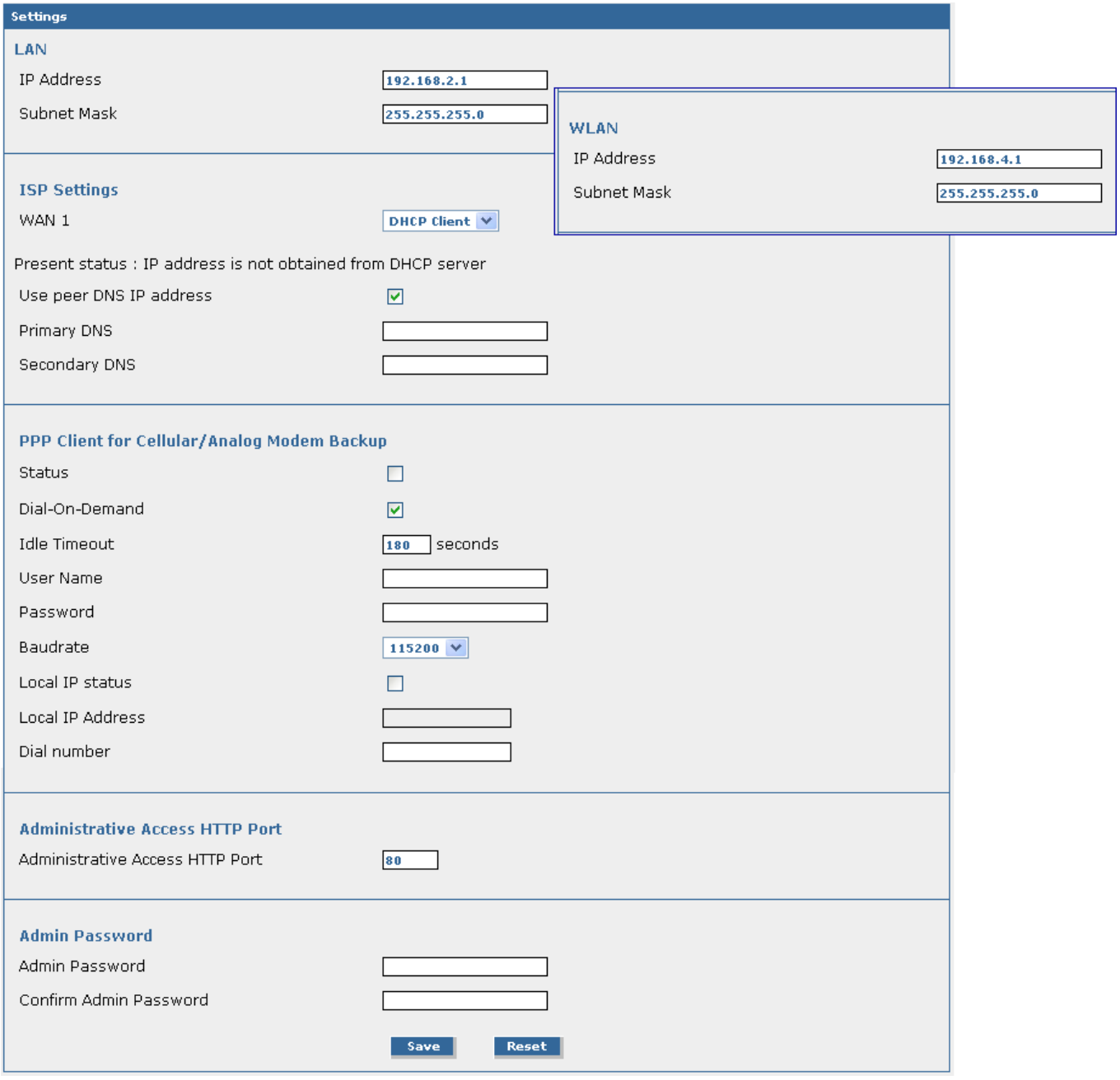
RF820/RF820-AP and RF830/RF830-AP Wizard Setup

Click the **Wizard Setup** button located under the Menu Bar. The following screen displays.

Use the same directions for the RF820/RF820-AP and RF830/RF830-AP.

Screen Notes:

- ***PPP Client for Cellular/Analog Modem Backup* is available only on the RF820/RF820-AP.**
- **The RF830/RF830-AP has two WAN ports; the RF820/RF820-AP has only one. A section labeled *WAN 2* displays on the RF830/RF830-AP Wizard Setup screen.**
- **A section labeled WLAN (inset shown on the right) displays after you select *Independent Subnet* on the *Network Setup > Wireless LAN* screen.**



LAN Settings

IP Address – 192.168.2.1 defaults into this field.

Subnet Mask – 255.255.255.0 default into the fields.

These should be acceptable for your site.

ISP Settings

WAN 1

Select the way the IP Address should be assigned for the WAN link.

The default is **DHCP Client**. The screen displays the input fields for this default.

The input fields change when you select **Static IP** or **PPPoE**.

- **WAN 1 DHCP Client Choice**

  DHCP (Dynamic Host Configuration Protocol) is a protocol that allows individual devices on an IP network to get their own network configuration information (IP address, subnet mask, broadcast address, etc.) from a DHCP server.

  Present Status: If the DHCP client is **not** enabled, the following message displays: *Present Status: IP address is not obtained from DHCP server.* If DHCP client is enabled, and if the IP address has been assigned by the DHCP server, then the following values will display:

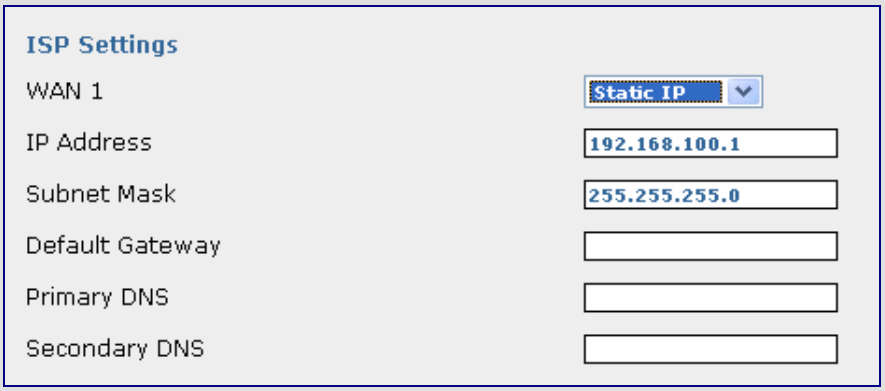
  Assigned IP Address
  Mask
  DHCP Server Address
  DNS Address
  Gateway Address
  Renew Time
  The time that the DHCP client should begin to contact its server to renew the lease it has obtained.
  Expiry Time
  Expiry time is the time that the DHCP client must stop using the lease if it has not been able to contact a server in order to renew.

  Use Peer DNS IP Address
  Check this box if you want the DNS server addresses from the peer (DHCP server) is to be obtained.
  Note: The DNS address obtained from the DHCP server will be displayed on the *Network Setup* > *Interface* screen.

  Primary DNS
  In this field, enter a primary domain server name (DNS). DNS (Domain Naming System) allows you to enter a name (i.e., mydomain.com) to be used in place of the computer's numeric IP address.

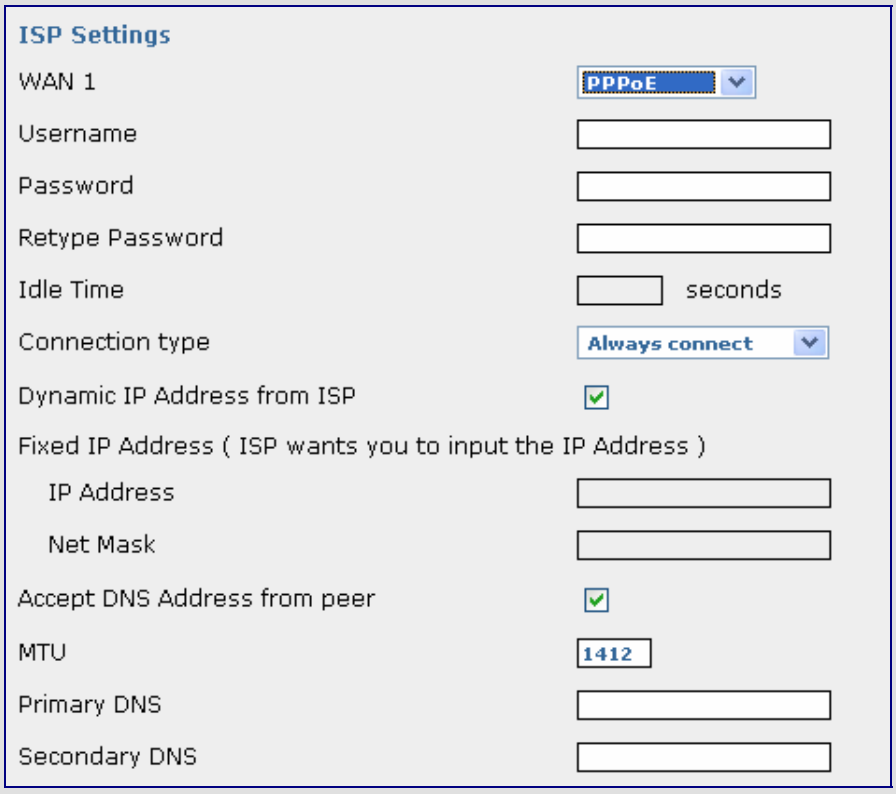
  Secondary DNS
  In this field, enter a secondary domain server name.

- **WAN 1 Static IP Choice**



If you choose Static IP for WAN 1, the IP Address (default is 192.168.100.1) and the Subnet Mask (default is 255.255.255.0) fields displays.
Enter the *Default Gateway*, the *Primary DNS* address and the *Secondary DNS* address for the IP address provided.

- **WAN 1 PPPoE Choice**



PPPoE (Point-to-Point over Ethernet) is a specification for connecting multiple computer users on an Ethernet local area network to a remote site through DSL or cable modems or wireless connection to the Internet. The following fields display when you select PPPoE:

User Name

Enter the user name give by the ISP.
Example: **user1@xyz.com** or user 1

Password

Enter the user's password.
These characters are not allowed: <, >.
The maximum number of allowed is 18.

Retype Password

Retype the password to confirm the one entered above. Passwords must match. If you receive an error, enter password in both fields again.

Idle Time

This option is available only when the Connection Type is *Trigger on Demand.* Specify the inactivity time (in seconds) after which the PPPoE link should be brought down.

Connection Type

Specify the type of connection for the link. Options are:
Always Connect: The link will always be established. It is not dependent on whether or not there is data or a traffic flow through the RouteFinder. Default is *Always Connect*.
Trigger on Demand: The link will be established only when there is data or a traffic flow through the RouteFinder.

Dynamic IP Address from ISP

Check the box to Enable the Dynamic IP address to be provided by the ISP. If enabled, the IP address obtained from the ISP is dynamic. If disabled, enter the IP address and subnet mask from the ISP in the following *Fixed Address* fields:
IP Address
Net Mask
Note: If the ISP does not support the Fixed Address option, then the RouteFinder will accept the dynamic IP address provided by the ISP.

Accept DNS Address from Peer

Check this box if you want the DNS server address to be obtained from the peer (the ISP). The DNS address obtained from the ISP will be displayed on the *Network Setup* > *Interface* screen. The details of the address/subnet mask obtained from the ISP are displayed as the *Present Status* on this screen.

MTU

A Maximum Transmission Unit (MTU) is the size (in bytes) of the largest packet that can be passed onwards. To read more about MTU, see the following Web site:
The default for this field is 1412, which should be acceptable for most applications.

http://en.wikipedia.org/wiki/Maximum_transmission_unit
Also see the hyperlinked references listed on this Web site.

Primary DNS

In this field, enter a primary domain server name (DNS). DNS (Domain Naming System) allows you to enter a name (i.e., mydomain.com) to be used in place of the computer's numeric IP address.

Secondary DNS

If a secondary domain server name is configured, enter its name here. The servers are consulted in the order in which they are configured.

PPP Client for Cellular/Analog Modem Backup (RF820/RF820-AP Only)

The PPP link is used as a backup link to the WAN interface. If the **Internet Keep-alive URLs** (see below) are not reachable through the WAN Ethernet interface, the PPP backup link automatically comes up and the system regains its connection to the ISP.

The PPP dial backup settings are:

Status

Check this box to enable PPP Dial Backup on WAN interface.

User Name

Enter the user name to authenticate the RouteFinder with the ISP.

Password (Optional)

Enter the user password. These special characters cannot be used: <, >.

Baud Rate

Select the serial baud rate from the drop down box.

Local IP Status

Check this box to enable support for negotiating an IP address with the ISP.

Local IP Address

Enter the IP address from which the RouteFinder can negotiate for an IP address from the ISP.

Dial Number

Enter the PSTN number to be dialed.

Note: When the backup link comes up or goes down, an email alert is sent to the administrator.

Administrative Access HTTP Port

Select the HTTP port for administrative access. The default is port 80. The port number should be between 1 and 65535. Well known ports and ports used by the firewall are not allowed.

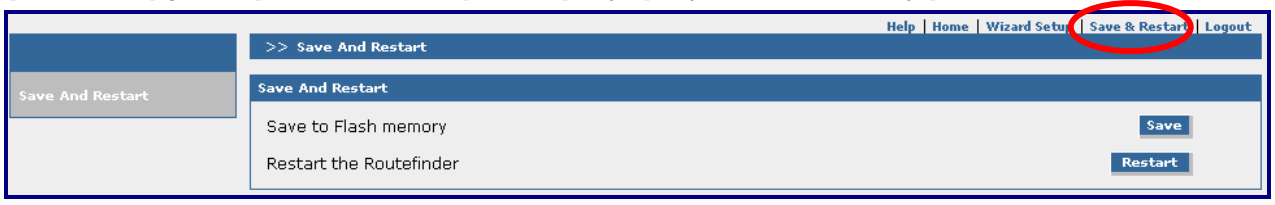
Admin Password

Change administrator's Password. Enter the password and a confirmation of the password. These characters are not allowed: <, >. Also, spaces are not allowed.

Save or Reset

Click **Save** at the bottom of the screen to save these entries. Use **Reset** if you want to change the entries you have just made.

SAVE & RESTART BUTTON UNDER MENU BAR



Save to Flash Memory – If a connection is established, then the settings have been entered correctly and your basic configuration is now complete. Now, you must save your settings to the Flash Memory; this saves the current settings in the flash prom and prevents settings from getting lost at the next power up.

Restart – This is optional. You do not have to restart the RouteFinder after saving to the flash memory.

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